
News Release

July 29, 2005

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Ohio River Mixing Characteristics To Be Studied by Injection of Red Dye

Weather permitting, U.S. Geological Survey scientists will inject a harmless bright red fluorescent dye into a stretch of the Ohio River upstream from Cincinnati starting Monday, August 1.

The dye study is aimed at obtaining useful information on the mixing and dispersion of waterborne contaminants in the river. Such information is used by Federal, state, and local agencies for various engineering applications, especially water-quality monitoring and control.

The red dye—known as Rhodamine WT—will first be injected from the Kentucky side of the river near the outflow of Twelvemile Creek across from New Richmond, Ohio, and may be visible for several miles downstream. A day or two later, a similar dye injection will be done about 5 miles upstream, near Point Pleasant, Ohio. “The dye, which has been used in hydrologic studies for decades, has been approved for use as a water tracer by the U.S. Environmental Protection Agency and is harmless to people, fish and plants at the concentrations used,” said USGS scientist Greg Koltun. “The dye will be measured throughout several river cross sections by pumping the river water through boat-mounted equipment that can detect and measure fluorescence. This will allow us to determine how quickly the dye will spread out and occupy the width of the river as it proceeds downstream—even after the dye is no longer visible to the human eye.”

“Weather permitting, the dye solution will be slowly and steadily injected into the river for 24 to 30 hours at each injection site,” Koltun said. Fluorometric measurements will be made during daylight hours starting near each injection point and continuing downstream several miles.” The study will be done at fairly low flow, with a target discharge of 25,000-30,000 cubic feet per second at Cincinnati. “Flows that are too high or changing too quickly will force postponement of the study,” Koltun said.

Greater Cincinnati Water Works is sponsoring this study to learn more about the mixing characteristics of contaminants within this stretch of the Ohio River. The results of this study will be helpful in developing Source Water Protection activities upstream of GCWW’s Richard Miller Treatment Plant. The Northern Kentucky Water District is participating in this study and is taking this opportunity to learn more about this stretch of the river.

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